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U.S. PATENT AND TRADEMARK OFFICE  
BOARD OF PATENT APPEALS  
AND INTERFERENCES

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte JES THYSSEN, HUAN-YU SU, ADIL BENYASSINE  
and EYAL SHLOMOT

Appeal No. 2003-0774  
Application 09/841,764

ON BRIEF

Before JERRY SMITH, FLEMING and SAADAT, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 21-44 and 46-53, which constitute all the claims remaining in the application. An amendment after final rejection was filed on July 30, 2002 but was denied entry by the examiner.

The claimed invention pertains to a method and apparatus for coding a speech signal having varying characteristics. One of a plurality of coding modes is applied to each speech signal segment. A silence description coding mode is selected upon identification of the absence of a substantially speech-like characteristic of a segment. The silence description coding mode is selected independent of the speech coding mode applied immediately before the segment.

Representative claim 21 is reproduced as follows:

21. A communication device having a multi-rate speech coder that performs silence description coding of a speech signal having varying characteristics, comprising:

a voice activity detection circuit that is capable of identifying a substantially speech-like characteristic of a segment of the speech signal; and

a processing circuit communicatively coupled to the voice activity detection circuit, the processing circuit being capable of selectively applying one of a plurality of coding modes to the segment of the speech signal;

wherein the plurality of coding modes comprises a plurality of speech coding modes and a silence description coding mode,

wherein the processing circuit selects the silence description coding mode upon the identification of the absence of a substantially speech-like characteristic of the segment of the speech signal independent of the speech coding mode applied immediately before the segment.

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The examiner relies on the following references:

Fujino et al. (Fujino)	5,436,899	July 25, 1995
Delargy et al. (Delargy)	6,029,127	Feb. 22, 2000
Rapeli	6,182,032	Jan. 30, 2001

Kazunori Mano et al. (Mano), "Design of a Pitch Synchronous Innovation CELP Coder for Mobile Communications," IEEE Journal On Selected Areas In Communications, Vol. 13, No. 1, January 1995, pages 31-41.

Giuseppe Caire, "CDMA System Design Through Asymptotic Analysis," Global Telecommunications Conference-Globecom '99, Vol. 5, December 1999, pages 2456-2460.

Sae-Young Chung et al. (Chung), "Multilevel RS/Convolutional Concatenated Coded QAM for Hybrid IBOC-AM Broadcasting," IEEE Transactions On Broadcasting, Vol. 46, No. 1, March 2000, pages 49-59.

The following rejections are on appeal before us:

1. Claims 21-35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Rapeli in view of Delargy.

2. Claims 36 and 37 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Rapeli in view of Fujino.

3. Claims 38-44 and 46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Rapeli.

4. Claims 47 and 48 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Rapeli in view of Fujino.

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5. Claim 49 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Rapeli in view of Fujino and Chung.

6. Claim 50 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Rapeli in view of Fujino, Chung and Mano.

7. Claim 51 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Rapeli in view of Caire.

8. Claims 52 and 53 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Rapeli in view of Mano.

Rather than repeat the arguments of appellants or the examiner, we make reference to the briefs and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the examiner and the evidence of obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellants' arguments set forth in the briefs along with the examiner's

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rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in claims 21-35. We reach the opposite conclusion with respect to claims 36-44 and 46-53. Accordingly, we affirm-in-part.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825

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(1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See Id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976). Only those arguments actually made by appellants have been considered in this decision. Arguments which appellants could have made but chose not to make in the brief have not been considered and are deemed to be waived by appellants [see 37 CFR § 1.192(a)].

We consider first the rejection of claims 21-35 based on the teachings of Rapeli and Delargy. These claims stand or fall together as a single group [brief, page 9], and we will consider

the rejection with respect to independent claim 34 as the representative claim of the group. In the final rejection, the examiner fails to explain what the citation of Delargy has to do with the rejection of independent claims 21 or 34. Delargy is only mentioned in connection with claim 38 which is not one of the claims listed in the rejection. In the answer, the examiner repeats the rejection from the final rejection. This rejection essentially finds that Rapeli teaches the claimed invention. Specifically, the examiner finds that "[b]y not specifying a dependency between processing speech and non-speech segments, Rapeli makes it clear to a person of ordinary skill in the art of speech signal processing that *the selection of the silent mode would be made independent of any previous speech coding mode*" [answer, pages 5-6]. In the answer, however, the examiner also adds the finding that it would have been obvious to the artisan to apply the teachings of Delargy in the invention of Rapeli because Delargy teaches the coding of each audio segment without regard for prior operations to avoid storing intermediate steps of prior processes [id., page 6].

Appellants argue that Rapeli fails to teach a silence description coding mode which is independent of the speech coding mode. Appellants note that Rapeli fails to discuss dependency or

independency between the speech coding modes and the silence description coding mode. Appellants argue that the portion of the examiner's rejection quoted above represents an unsupported conclusion made by the examiner. Specifically, appellants argue that failure to teach against something is not necessarily a teaching in favor of it. Appellants note that in conventional speech signal processing, a silence description coding mode uses data from previous and future speech signals and is not independent of previous coded speech segments as claimed. With respect to Delargy, appellants argue that the operation disclosed therein is directly dependent upon the coding of the audio signal in the previous frame which is contrary to the claimed invention [brief, pages 9-16].

The examiner responds by asserting that "the prior art of record teaches switching operation at the instant periods of silence, without involving or requiring any consideration of previous operations. Changing operations at periods of silence avoids interfering with the quality of speech, and each decision is made independently of prior coding" [answer, page 17].

Appellants respond that because Rapeli is silent on the dependency or independency between processing speech and non-speech segments, such silence should be construed in light of conventional wisdom in the art, which teaches a dependency [reply brief].

With respect to the teachings of Rapeli, we agree with appellants that Rapeli cannot be relied on for teaching that the silence description coding mode is independent of the previous speech signal coding mode. As argued by appellants, the failure of Rapeli to disclose that the silence description coding mode is dependent on the speech coding mode is not evidence that there must be an independence between them. We agree with appellants that a teaching of independence cannot be inferred from the failure of Rapeli to disclose any relationship at all.

Therefore, we conclude that the finding made by the examiner with respect to Rapeli, which is quoted above in the discussion of the rejection, is unsupported by the reference.

With respect to the teachings of Delargy, however, we do not agree with appellants that the operation of Delargy does not teach the claimed independence. Delargy improves upon a speech signal coding standard by coding a frame of silence with a single output byte. If the next frame is also silence, no output is

generated. At the time silence is first detected, the operation in Delargy is to code the frame as a single output byte. This coding is not based on the manner in which the previous speech frame was coded and is, therefore, independent of the coding used for the speech signal. If the first segment of representative claim 34 is defined as the last frame of speech before silence in Delargy and the second segment of claim 34 is defined as the first frame of silence, then the operation of Delargy appears to meet the claimed invention. In other words, the single output byte in Delargy is a silence description coding mode which is independent of the speech coding mode used for the immediately preceding speech signal segment. Even if one argues that all the segments in Delargy may not meet the claimed invention, it is enough for a rejection on prior art that the claimed invention is met at some instant by the prior art. The claimed invention merely requires that two segments be identified in which the independency exists. As noted above, we find that Delargy teaches this independence at least for the two segments defined in the manner discussed above.

With respect to the combination of Delargy with Rapeli, we agree with the examiner that it would have been obvious to the artisan to use the silence description coding mode of Delargy in

the system of Rapeli in order to derive the benefits of this coding specifically taught by Delargy. Since appellants have indicated that claims 21-35 stand or fall together as a single group, we sustain the examiner's rejection of claims 21-35 based on the teachings of Rapeli and Delargy.

Although appellants indicate in the brief that all the appealed claims stand or fall together, the examiner's application of the prior art forces us to consider each of the other rejections separately. As noted above, the rejection of claims 21-35 cannot be supported by Rapeli taken alone, but the rejection can be supported using the combined teachings of Rapeli and Delargy. For reasons known only to the examiner, Delargy is not cited as an applied reference against any of the other claims on appeal. Even claims 36 and 37, which depend from claim 34, do not cite Delargy as an applied reference. Since we have determined that Delargy is the only reference which teaches an independence between the speech coding modes and the silence description coding mode, the failure to apply Delargy against any of the other claims on appeal results in a failure to establish a prima facie case of obviousness with respect to these claims. In other words, since the examiner's rejection of claims 36-44 and 46-53 fails to apply the teachings of Delargy, the rejection of

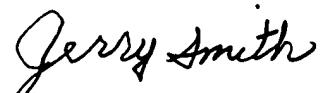
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claims 36-44 and 46-53 is unsupported by the applied prior art. The examiner should consider whether a proper rejection can be made against claims 36-44 and 46-53 using Delargy as one of the applied teachings.

In summary, we have sustained the examiner's rejection of claims 21-35, but we have not sustained the examiner's rejection of claims 36-44 and 46-53. Therefore, the decision of the examiner rejecting claims 21-44 and 46-53 is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

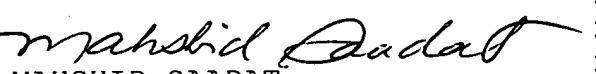
AFFIRMED-IN-PART



JERRY SMITH )  
Administrative Patent Judge )  
)



MICHAEL R. FLEMING )  
Administrative Patent Judge )  
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MAHSHID SAADAT )  
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